

Q-1) a. Explain how the CALL and RET instructions operate.

b. Rewrite the following code using PROC and ENDP:

```
FillMem: mov al, 0FFh
FillLoop: mov [bx], al
          Inc bx
          loop FillLoop
          ret
```

c. The array C of 100 bytes is assumed to contain string of ASCII characters. Write an assembly language code to Check if it contains the '\$' character and go to location HasDollar if it does.

Q-2) a. Write an ALP to generate square wave with period of 200μs and address of output device is 55H for 8086 microprocessor.

b. For 8088 system, draw the timing diagram for the following instruction : Mov AL, [1000] ? ASSUME DS=1000H

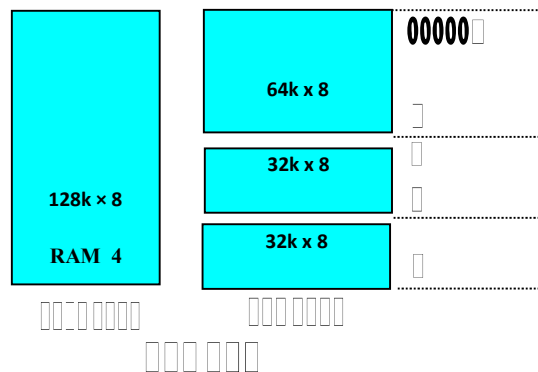
Q-3) a. describe the action taken by 8086 when NMI pin is activated ?

b. If the interrupt service routine (ISR) of the interrupt source (INT 10H) has located at a logical address (1500:E308H). Write the instruction required to initialize the interrupt vector table in order to handle this interrupt.

Q-4) a. You are requested also to interface a **32 KB EPROM** to an **8088** microprocessor in the minimum mode. The 32 KB EPROM consists of **4 of EPROM chips**. If the last address of the EPROM is **FFFFFH**, design the decoding circuit to generate the chip select signals for the EPROM chips by using an appropriate decoder and any additional logic, if needed.

b. You are asked to interface an additional **256 KB RAM** and **128 KB EPROM** to an **8086** microprocessor in the minimum mode. Answer all of the following questions:

(1) The **256 KB RAM** consists of **four** RAM chips. If the starting address of the RAM is **00000H**, fill-in the boundary addresses on the following memory map.



(2) The **128 KB EPROM** consists of **three** EPROM chips. If the last address of the EPROM is **FFFFFH**, fill-in the boundary addresses on the following memory map.

